

CLAIMS

1. SiCOI type composite substrate manufacturing method comprising the following steps :

5 - supply of an initial substrate comprising an Si or SiC support bearing a layer of SiO₂ whereon a thin layer of SiC is transferred,

 - epitaxy of SiC on the thin layer of SiC,

 wherein the epitaxy is conducted at the following
10 temperatures :

 - from 1450°C to obtain 6H or 4H polytype epitaxy on a transferred thin 6H or 4H polytype layer respectively, if the support consists of SiC,

 - from 1350°C to obtain 3C polytype epitaxy on a
15 transferred thin 3C polytype layer, if the support consists of Si or SiC,

 - from 1350°C to obtain 6H or 4H polytype epitaxy on a transferred thin 6H or 4H polytype layer respectively, if the support consists of Si.

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2. Method according to claim 1, wherein before the epitaxy step, an initial substrate preparation step is provided for to improve the surface quality of the transferred thin SiC layer.

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3. Method according to claim 2, wherein the preparation step consists of subjecting the surface of the transferred thin SiC layer to an operation selected from polishing, etching and hydrogen etching.

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4. Method according to claim 1, wherein several SiC

layers are successively grown epitaxially on the thin SiC layer.

5. Use of the SiCOI type composite substrate obtained by
5 means of the manufacturing method according to any of claims 1
to 4 to produce semiconductor devices.

6. Semiconductor device produced on an SiCOI type
composite substrate obtained by means of the manufacturing
10 method according to any of claims 1 to 4.